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Geological Survey

MULTICHANNEL SEISMIC-REFLECTION PROFILES COLLECTED  
IN 1977 IN THE NORTHERN BERING SEA

by

Alan K. Cooper, Michael S. Marlow and Dennis M. Mann

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U.S. Geological Survey, Menlo Park, CA

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During the summer of 1977 the U.S. Geological Survey (USGS) collected approximately 3200 km of 24-channel seismic reflection data across the continental margin in the northeastern Bering Sea (Fig. 1). The profiles were collected on the USGS Research Vessel S.P. Lee using a sound source of five airguns with a volume of 1326 cubic inches of air compressed to approximately 2000 psi. The recording system consisted of a 24-channel streamer, 2400 meters long with a group interval of 100 m, and a GUS (Global Universal Science) model 4200 digital recording instrument. Shots were fired every 50 meters. Navigational control for the survey was provided by a Marconi integrated navigation system using transit satellites and doppler-sonar augmented by Loran C (Rho-Rho). A 2-millisecond sampling rate was used in the field; the data were later desampled to 4-milliseconds during the demultiplexing process. Record lengths vary from 6 to 12 seconds depending on water depth and geologic structure, to give 6 to 8 seconds of data below the seafloor. Processing was done at the USGS Pacific Marine Geology Multichannel Processing Center in Menlo Park, California, in the sequence: editing-demultiplexing, velocity analysis, CDP stacking, deconvolution-filtering, and plotting on an electrostatic plotter. Plate 1 is a trackline chart showing shotpoint navigation.

The data are available in the following formats:

- 1) Electrostatically plotted profiles which have been deconvolved and filtered after stacking. Copies of the profiles may be purchased through:

National Geophysical Data Center  
NOAA/EDIS/Code D64  
325 Broadway  
Boulder, Colorado 80302

- 2) Digital magnetic stack tapes which have been processed using velocities derived from velocity analysis. These tapes are not deconvolved or band-pass filtered. Copies of the stack tapes and a description of the tape format can be obtained at the requesters expense by contacting:

Dennis M. Mann  
Pacific Branch of Marine Geology  
U.S. Geological Survey  
345 Middlefield Rd. MS 979  
Menlo Park, California 94025

- 3) Digital magnetic demultiplexed tapes. These tapes have been edited for missed shots, blanking times, and muting times. Copies of the demultiplexed tapes and a description of the tape formats can be obtained at the requesters expense by contacting Dennis Mann at the above address.

